

What is claimed is:

1. A method of purifying lansoprazole, comprising the steps of:
 - a) providing a solution of lansoprazole in a solvent selected from an organic solvent or a mixture of organic solvent and water in the presence of an amine compound;
 - 5 b) combining the provided solution with an acid, and
 - c) isolating the purified lansoprazole.
2. The method of claim 1 wherein the amine compound is present in 1:1, mole:mole, ratio relative to the lansoprazole.
3. The method of claim 1, wherein solution is in an organic solvent selected from the
10 group consisting of alcohols, acetone, 2-butanone, dimethyl-formamide and tetrahydrofuran.
4. The method of claim 3, wherein the alcohol is selected from the group consisting of ethanol, methanol, n-propanol, and i-propanol.
5. The method of claim 4, wherein the alcohol is ethanol.
- 15 6. The method of claim 1, wherein the amine compound is selected from the group consisting of ammonia, ammonium hydroxide, diethylamine, triethylamine and methylamine.
7. The method of claim 6 wherein the amine compound is ammonium hydroxide.
8. The method of claim 7 wherein the ammonium hydroxide is present at a mol/mol
20 ratio to lansoprazole of greater than 1.
9. The method of claim 1 wherein the acid combined is selected from the group consisting of acetic acid, formic acid, and hydrochloric acid.
10. The method of claim 9 wherein the acid is acetic acid.
11. The method of claim 1, wherein the solvent is a mixture of organic solvent and
25 water wherein the ratio of organic solvent to water is about 0.2:1 to about 3:1, vol/vol.

12. The method of claim 11 wherein the ratio of organic solvent to water is about 1.5:1, vol/vol.
13. The method of claim 1, wherein the solvent of the provided solution is a mixture of organic solvent and water and is present at a vol/wt ratio to lansoprazole of about 17:1 to about 5:1.
14. The method of claim 13 wherein the mixture of organic solvent and water is present at a vol/wt ratio to lansoprazole of about 11:1.
15. The method of claim 1, wherein the amine compound is present at a mol/mol ratio to lansoprazole of about 17:1 to about 1:1.
16. The method of claim 1, wherein the amine compound is present at a mol/mol ratio to lansoprazole of about 7:1.
17. A method of preparing a lansoprazole containing less than about 0.1% (wt/wt) water, comprising the steps of:
- a) crystallizing a lansoprazole from solution in a solvent that is an organic solvent or a mixture of an organic solvent and water; and
 - b) isolating the lansoprazole containing less than about 0.1% (wt/wt) water.
18. The method of claim 17 wherein the lansoprazole of step a) is crystalline.
19. The method of claim 17 wherein the lansoprazole of step a) is dry.
20. The method of claim 17 wherein the lansoprazole of claim step a) is wet.
21. The method of claim 17, wherein the organic solvent is selected from the group consisting of acetone, 2-butanone, methanol, dimethyl-carbonate, and diethyl-carbonate.
22. The method of claim 21 wherein the organic solvent is acetone.
23. The method of either of claims 17 or 22 wherein the crystallization is effected by adding water to the solution.
24. The method of claim 23, wherein the added water is less than about 20% (vol/vol) water relative to the solution.

25. The method of claim 17, wherein the crystallization step is performed at reflux.
26. The method of claim 17 wherein the crystallization step is performed at a temperature of about 50°C or less.
27. The method of either of claims 25 or 26 further comprising the step of cooling
5 subsequent to the crystallization step.
28. The method of claim 17 wherein ammonium hydroxide is added before or in the course of the crystallization step.
29. The method of claim 28 wherein the ammonium hydroxide is added at a mol/mol ratio of ammonium hydroxide to lansoprazole of about 0.05:1.
- 10 30. A method of purifying lansoprazole to obtain lansoprazole having less than about 0.1%, wt/wt, water comprising the steps of:
- a) providing a solution of lansoprazole in a solvent selected from an organic solvent or a mixture of organic solvent and water in the presence of an amine compound, wherein the amine compound is present at a ratio of about 1:1, mole:mole, relative to
15 lansoprazole;
 - b) combining the provided solution with an acid;
 - c) isolating the lansoprazole;
 - d) dissolving the isolated lansoprazole in an organic solvent selected from the group consisting of acetone, 2-butanone, methanol, dimethyl-carbonate, and diethyl-
20 carbonate; and
 - e) isolating the purified lansoprazole having less than about 0.1%, wt/wt, water.
31. The lansoprazole made by the method of any of claims 1, 17, and 30.
32. Lansoprazole containing less than 0.20% (wt/wt) impurities.
33. The lansoprazole of claim 32 containing less than 0.1%, wt/wt, water.
- 25 34. Lansoprazole containing less than 0.20%, wt/wt, combined sulfide and sulfone derivatives.
35. The lansoprazole of claim 34 containing less than 0.1%, wt/wt, water.

36. Lansoprazole containing less than 0.10%, wt/wt, sulfide derivative.
37. The lansoprazole of claim 36 containing less than 0.1%, wt/wt, water.
38. Lansoprazole containing less than 0.10%, wt/wt, sulfone derivative.
39. The lansoprazole of claim 38 containing less than 0.1%, wt/wt, water.